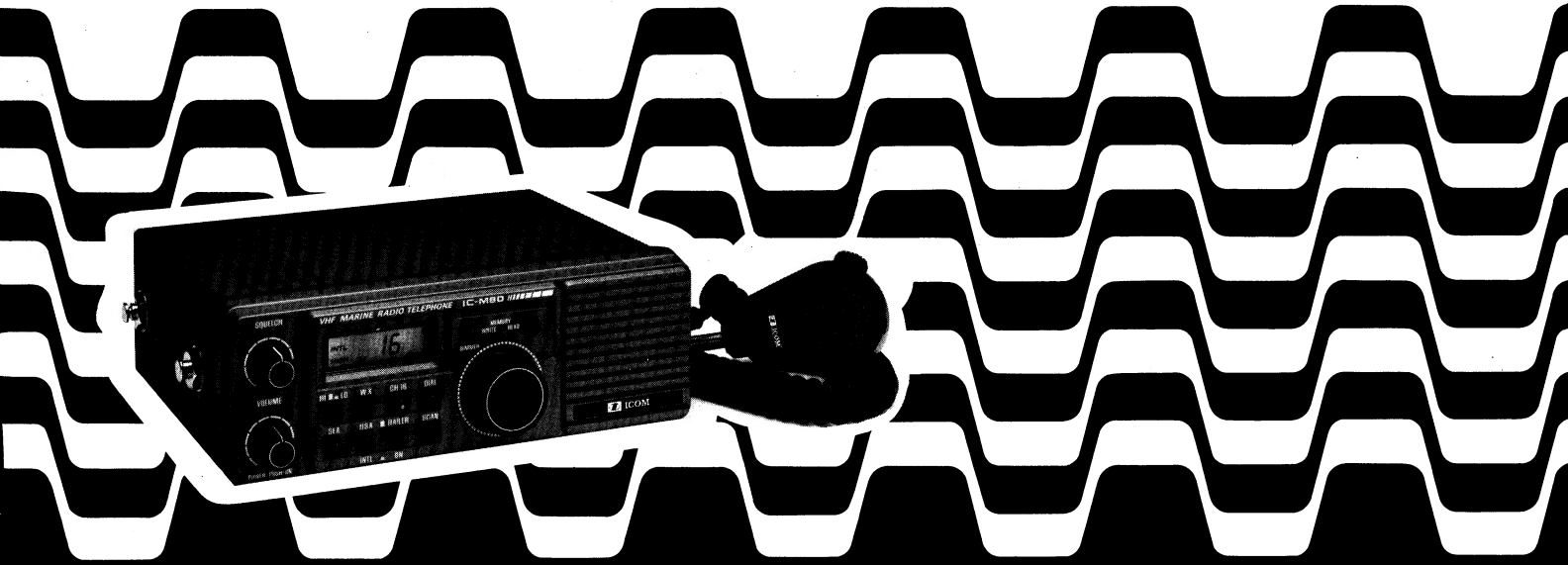
ICOM

OWNERS MANUAL

IC-M80

VHF MARINE RADIOTELEPHONE



ICOM INCORPORATED

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INTRODUCTION

You are now the proud owner of one of the finest VHF FM Marine Transceivers on the market today. It was designed and built by ICOM INCORPORATED, a long time leader in the field of VHF communication. We put all the technology, and experience we have gained over the years in a transceiver that was built from the ground up specifically for Marine. We know that your IC-M80 will give you years of enjoyment and dependable communication.

FEATURES

* *All marine channels plus weather pre-programmed.*
* *All solid state including the 25 watt Power Amplifier module.*
* *Weather and dust-tight case; molded frame.*
* *No moving controls inside - PA and RF switching are solid state.*
* *A snap-in mounting bracket; adjustable angle; lockable for security.*
* *Advanced RF front end with helical resonators; MOSFETs; and crystal/mechanical filter for adjacent channel and intermodulation rejection.*
* *Auto Monitor for Channel 16.*
* *High power, distortion-free audio output.*
* *Complete line of accessories available.*

SPECIFICATIONS

GENERAL

Size	78mm(H) x 228mm(W) x 208mm(D)
Weight	2.1 kg
Number of Channels	All USA and INTERNATIONAL marine channels plus 10 weather channels
Stability	0.0005%
Temperature Range	–20 to +60 degrees C
Channel Spacing	25 KHz

Current Drain (Max)	Receive	
	With full 5 watt output	0.8A
	Standby	0.3A
	Transmit	
	Low output	1.3A
	High output	5.5A
Primary Voltage	13.6 Volts DC	
Antenna Impedance	50 ohms	

RECEIVER SECTION

Frequency Range	156 ~ 163MHz
Sensitivity	0.3μV (–20dB quieting)
Selectivity	–70dB at 25KHz (EIA SINAD)
Spurious & Image Rejection	80dB
Threshold Squelch Sensitivity	0.2μV
Tight Squelch Sensitivity	2μV
IF Frequencies	1st IF: 21.4MHz
	2nd IF: 455KHz
Audio Output	5 watts to 4 ohm Speaker
	@ 10% distortion

TRANSMITTER SECTION

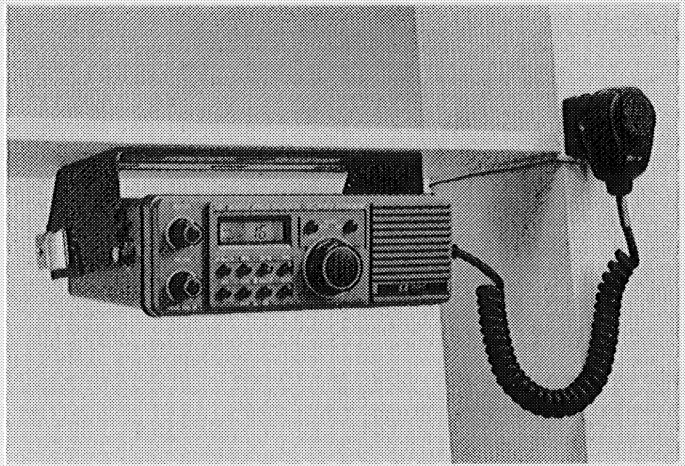
Frequency Range	156 ~ 157.5MHz
Modulation	±5KHz (16F3, F3E 16K0)
RF Power Output	High 25 watts
	Low 1 watt
Antenna Impedance	50 ohms
Spurious & Harmonic	Spurious emission:
Emissions	70dB below Carrier
	Harmonic emission:
	60dB below Carrier
Microphone	600 ohm microphone,
	or 600 ohm handset
Audio Frequency Response	+1, –3dB of 6dB/octave pre-emphasis characteristic from 300 to 3000Hz
Audio Distortion	Less than 7% at 1000Hz for ±3KHz Deviation

INSTALLATION

Planning

Select a location for your transceiver which will allow free access to the front controls, good air circulation and rear clearance for access to the fuse and cable connectors. Provide the best protection you can from direct rain or heavy seas.

Avoid long cable runs to the antenna and power source. At the same time, keep power and antenna cables as for as possible from electrical sources i.e. generators, alternators, electrical pumps, etc. Stay away from the magnetic compass with the cables, and avoid running the antenna cable near electronic instruments.

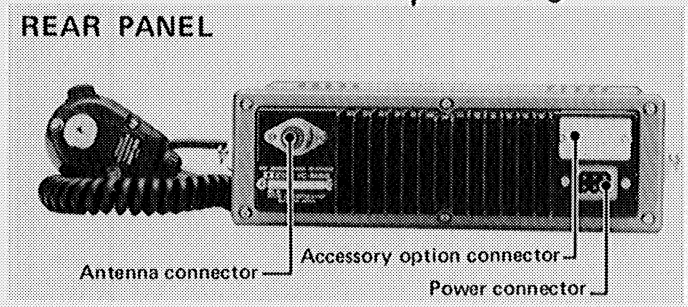


Procedures

Your ICOM transceiver is supplied with a universal bracket which allows "over" or "under" mounting by placing the bracket where the unit is adequately supported when wave shock and vibration are considered. Your transceiver comes to you inside the mount when shipped, and the unit is easily removed by releasing the two side catches.
The mounting hardware supplied will fit most installations, but should you need special mounting fasteners any good marine supply will be able to assist. As in any marine installation it is recommended that high quality marine fasteners be used. Try to avoid drilling new mounting holes in the bracket, as balance of the set may be affected.

PWR Cord OPC-047A

REAR PANEL

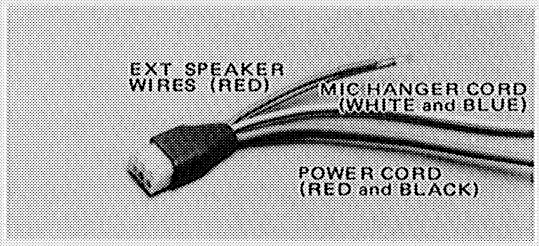


Primary Power

If at all possible, do not exceed the 10 feet length of the power cable supplied, if it is necessary to make a run of over 10 feet use the wire guage specified in the following table. Color coding of the power cable is as follows: Red is for positive (+) side of the battery, black for minus (—). The blue and white wires are for the microphone hanger; the short red wires are for connection of an external speaker. When hooking up the red and black wires make the splice as close as possible to the power side of the fuse holder, solder all connections and insure that all connections are clean, tight and moisture free.

Be sure to leave a service margin in the power cable so that should the set have to be removed from the bracket it can slide out without straining the cable.

POWER INPUT CABLE	
WIRE GAUGE	MAX DISTANCE
14	15'
12	25'
10	35'
8	60'
6	100'



External Speaker

To connect an External Speaker, remove the sealed plastic at end of the short red wires at the power cord/mic hanger plug, and connect an 8 ohm speaker to the wires, solder them and cover with plastic tape.

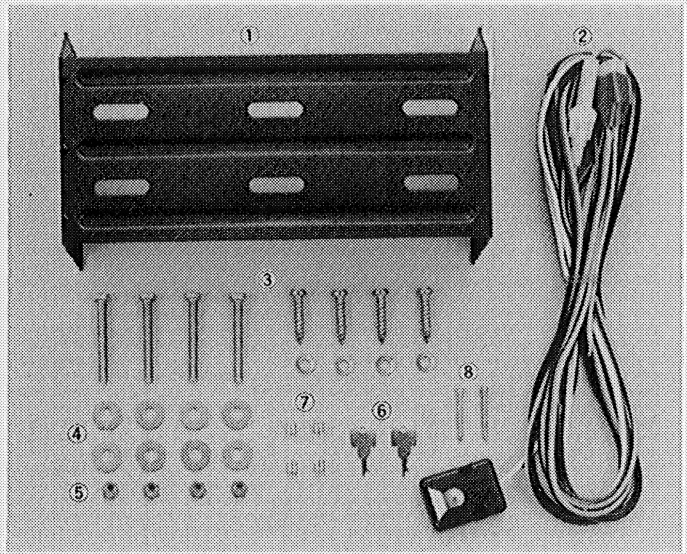
Antenna

Any marine antenna of good quality and 50 ohms impedance will suffice, but the use of a gain antenna is recommended. The antenna is the single most important item that will influence the performance of the transceiver. Location is also important and should you have any doubt request the assistance of your dealer's technician. Follow the antenna maker's directions exactly. For an existing antenna, be sure that all connections are corrosion free and that all are firmly seated.

Preliminary Set up

The permanently mounted microphone attached to your transceiver should now be placed at a convenient location where the cable will neither interfere with your crafts operation while in its hanger, or in use by you or the crew. The CH 16 Auto-Monitor control cable should be routed out of the way and connected to the marked receptacle at the rear of the set.

Accessories



1. Mounting Bracket
2. Power Cord and Microphone Hanger Box
3. Mounting Screws
4. Mounting Washers
5. Mounting Nuts
6. Keys
7. Fuses 10A
8. Microphone Hanger Box Mounting Screws

PRE-OPERATION

Licenses Required

1. **Ship Station License**
   Your craft, when equipped with VHF/FM equipment, has a radio station on board which, if used, must have a current license. It is unlawful to operate a Ship Station which is not licensed. Inquire through your dealer or appropriate government agency for an application for a Ship Radio-Telephone license. Your craft station will be issued a call sign.
2. **Operators License**
   A Restricted Radiotelephone Operator Permit is the license most often held by small vessel radio operators, if a radio is not required for safety purposes. You can usually obtain this permit by mail without examination. Again, contact your marine dealer or appropriate government agency for information or application.
   The Restricted Radiotelephone Operator Permit must be posted or kept on the person of the operator. Only a licensed radio operator may operate a radiotelephone transmitter. However, non-licensed individuals may talk over a radiotelephone if a licensed operator starts, supervises, ends the call, and makes necessary log entries. A current copy of the appropriate government agency rules and regulations is usually required to be kept.

Logs and Documents

Most countries require that a log of all contacts made over the Radiotelephone be kept. The Ship Radiotelephone Station licensee is the person responsible for compliance.

CONTROL FUNCTIONS

③RF POWER SWITCH

④SEA (DUAL WATCH) BUTTON

①SQUELCH CONTROL

②VOLUME CONTROL and POWER SWITCH

⑤WEATHER CHANNEL BUTTON

⑥CHANNEL ALLOCATION SWITCH

⑧HAILER SWITCH

⑫CHANNEL and FUNCTION DISPLAY

⑬MEMORY WRITE/DIMMER BUTTON

⑭MEMORY READ BUTTON

⑪CHANNEL SELECTOR

⑨DIAL SELECT BUTTON

⑩SCAN BUTTON

⑦CHANNEL 16 SELECT BUTTON

1. **SQUELCH CONTROL**
Controls squelch threshold level which quiets the receiver when no signal is present.

2. **VOLUME CONTROL and POWER SWITCH**
By pushing this knob, this switches the power supplied to the radio ON and OFF.
By turning this knob, this controls the audio output level of the receiver.

3. **RF POWER SWITCH**
Switches the transmitter output power. In the "LO" position, the power is 1 watt, sufficient for local communication. In the "HI" position, the output is a full 25 watts for long distance communication.

4. **SEA (DUAL WATCH) BUTTON**
Turns the SEA (DUAL WATCH) function ON. During a communication or receiving on a channel (except on channel 16), if you would like to monitor channel 16, push this button, and the receiving frequency will sample channel 16 every two or three seconds.

5. **WEATHER CHANNEL BUTTON**
By pushing this button, the radio selects a weather channel which is selected by the channel selector.

6. **CHANNEL ALLOCATION SWITCH**
Switches the channels for the international allocation and U.S.A. allocation.

7. **CHANNEL 16 SELECT BUTTON**
Sets the radio to Channel 16. This function overrides all other channel selecting buttons and selector.

8. **HAILER SWITCH**
Switches the set between transceiver operation and hailer (public address) operation.

9. **DIAL SELECT BUTTON**
Sets the radio to a channel which is selected by the channel selector, and enables the channel selector to select channels.

10. **SCAN BUTTON**
Starts the scanning operation by pushing this button. To stop the scanning operation, push this button or any one of the channel selecting buttons (WX, CH16, DIAL, Memory write and Memory Read buttons), or turn the channel selector.

11. **CHANNEL SELECTOR**
Selects a channel of the programmed channels, memory channels or weather channels. Turning this selector while holding the MEMORY WRITE/DIMMER button changes the intensity of the display.

12. **CHANNEL and FUNCTION DISPLAY**
Displays the operating channel and status of the radio.

13. MEMORY WRITE/DIMMER BUTTON

Transfers your desired channel into a memory channel, and enables the channel selector to change the intensity of the display.

14. MEMORY READ BUTTON

Sets the radio to a memory channel which is selected by the channel selector.

ADDITIONAL CONTROLS

1. **Microphone Hanger Box**
   Triggers the Channel 16 Auto-Monitor circuit when the microphone is replaced in the hanger.

2. **Handset Cradle**
   When the optional Handset is used, the internal switch mutes the front speaker and applies audio to the handset speaker. When the handset is replaced in the cradle, the internal switch turns on the front speaker and triggers the Channel 16 Auto-Monitor circuit.

OPERATION

BASIC OPERATION

Channel 16 Auto-Monitor

The Channel 16 Auto-Monitor circuit simplifies operation of the radio by automatically switching to Channel 16 when the mic or handset is replaced on its hanger. However, even with the mic or handset in its hanger, any channel including weather can be monitored simply by pushing the appropriate button and/or turning the channel selector.

Receiving

1. Turn the ② VOLUME CONTROL and ① SQUELCH CONTROL fully counterclockwise.

2. Press the ② POWER SWITCH and channel "16" will be indicated on the ⑫ CHANNEL and FUNCTION DISPLAY. Now the set is turned ON and receiving on channel 16.

3. Turn the Volume Control slowly clockwise until you reach a comfortable level of noise, if no signal is present, or audio if a signal is present.

4. Turn the Squelch Control carefully clockwise until the noise just disappears. (Approxmately 11 o'clock position). The radio is now set and will remain quiet until a signal is heard. (This should be done when no signal is present.)

5. When you wish to receive one of the channels installed, first, select the international or U.S.A. allocation which includes the desired channel, by the ⑥ CHANNEL ALLOCATION SWITCH. Check the channelization list (on page 17) for appropriate channel selections.

   Then push the ⑨ DIAL SELECT BUTTON and rotate the Channel Selector to the desired channel.

   At this time, the selected allocation (INTL or USA) and

channel number are displayed on the CHANNEL and FUNCTION DISPLAY.

6. When you wish to monitor a weather channel, push the ⑤ WEATHER CHANNEL BUTTON, then rotate the Channel Selector to the desired weather channel. At this time, the letters of "WX" and selected weather channel number (0 ~ 9) are displayed on the CHANNEL and FUNCTION DISPLAY.

7. When you wish to receive one of the memory channels, push the ⑭ MEMORY READ BUTTON and rotate the Channel Selector to the desired memory channel. At this time, the selected memory channel number (MEMO 0 ~ 9), and the allocation and channel number of the memorized channel are displayed on the CHANNEL and FUNCTION DISPLAY.

8. When you wish to return channel 16, simply push the ⑦ CHANNEL 16 SELECT BUTTON, and the channel number of "16" is displayed on the CHANNEL and FUNCTION DISPLAY.

External speaker

When an external speaker is added to the IC-M80, both the external speaker and the internal speaker carry receive audio. This is true in the receive mode and when the unit is placed in the hailer mode. Pressing the microphone Push-To-Talk switch causes the unit to transmit when the unit is in the receive mode, muting both speakers. In the hailer mode, activating the Push-To-Talk switch mutes the internal speaker and allows public address audio to go out the external speaker.

The external speaker is connected to the receiver all of the time when the unit is ON.

If an application requires control of the external speaker from the transceiver, an external switch must be used (not supplied by ICOM). This switch should be electrically in series with one of the wires going to the external speaker.

Transmitting

1. Push the DIAL SELECT BUTTON and rotate the Channel Selector until you find an empty channel that can be used for the type of communication you wish. Be sure the channel is open.

2. Push the CHANNEL 16 SELECT BUTTON, and after confirming that the channel is open, call the party you wish to contact. When contact is made, go to the channel you previously selected by pushing the DIAL SELECT BUTTON.

3. Hold the mic fairly close to your mouth and speak in a clear, natural voice. When you have finished your part of the conversation, release the PTT switch on the microphone, and the radio will receive.

4. When your conversation is completely finished, replace the mic or handset in its hanger, and the radio will auto-

matically return to Channel 16.

(Before Transmitting, be sure that the ③ RF POWER SWITCH is in the proper position for the distance and needs of your contact. Use 25 watts only when necessary, to avoid interfering with others trying to use the same channel in another area.)

MEMORY CHANNEL OPERATION

Memory Writing (Programming the Memory Channels)

1. Push the ⑭ MEMORY READ BUTTON and a memory channel will be displayed on the CHANNEL and FUNCTION DISPLAY.

2. Rotate the ⑪ CHANNEL SELECTOR to the channel to be programmed (MEMO 0 ~ 9). As an example, set it at the memory channel 1 (MEMO 1).

   The display will show the memory channel number "MEMO 1" and the previously programmed channel number. The radio will receive on this channel.

   If no channel has been programmed since first turning the power ON, "16" will be shown on the display, and the radio will receive on channel 16.

3. While holding both the ⑭ MEMORY READ BUTTON and the ⑬ MEMORY WRITE/DIMMER BUTTON in, rotate the channel selector, and the displayed channel number will be changed. Rotate the channel selector so that the display shows the desired channel, then release your finger from the MEMORY WRITE/DIMMER BUTTON then from the MEMORY READ BUTTON. At this moment, the desired channel will be memorized into the selected memory channel. The selected allocation, either the "INTL" or "USA", will be memorized as well.

4. Program desired channels into other memory channels in the same manner. (The weather channels can not be memorized into any memory channels.)

5. The programmed channels in the memory channels are maintained by an internal MEMORY BACKUP battery, even if the radio is removed from the vessel.

Memory Reading

Push the MEMORY READ BUTTON, then rotate the Channel Selector to the desired memory channel, MEMO 0, MEMO 1, MEMO 2, - - - - - or MEMO 9, and the previously programmed channel is then recalled.

SCANNING OPERATION

All Channel Scan

To scan all channels (INTL allocation: Channel 1 ~ Channel 88, USA allocation: Channel 6 ~ Channel 88);

1. Engage the SQUELCH, then push the ⑨ DIAL SELECT

BUTTON, and a channel number is displayed on the ⑫ CHANNEL and FUNCTION DISPLAY. Depressing the ⑩ SCAN BUTTON starts the scan from the displayed channel to the highest channel (Channel 88).

If the SQUELCH is not engaged, the scan does not start.

2. When the scanning channel reaches the highest channel, it automatically returns to the lowest channel (INTL: Channel 1, USA: Channel 6), and continues scanning up to provide endless scanning operation.

3. While the SQUELCH is engaged, the squelch opening as a signal is received will stop the scanning automatically. When the scan has been stopped by the auto-stop function, the scan will restart after the signal goes away.

4. To stop the scanning operation, depress the SCAN BUTTON, the DIAL SELECT BUTTON or rotate the Channel Selector.

5. If you transmit on the auto-stopped channel, the scan function will be disengaged.

Memory Channel Scan

To scan the ten memory channels continuously;

1. Program ten desired channels into the Memory Channels 0 ~ 9.

2. Push the ⑭ MEMORY READ BUTTON, and a memory channel number and programmed channel number are displayed on the display.

3. Depress the ⑩ SCAN BUTTON, and the radio starts scanning the programmed channels in the Memory Channels 0, 1, 2, 3, - - - - - 9, and 0, 1, 2, 3, - - - - -.

4. To stop scanning without opening the squelch, depress the SCAN BUTTON, MEMORY READ BUTTON or turn the Channel Selector.

5. Other operations are the same as the All Channel Scan.

Weather Channel Scan

To scan the ten weather channels continuously;

1. Push the ⑤ WEATHER CHANNEL BUTTON and depress the ⑩ SCAN BUTTON, and the radio starts scanning the weather channels 0, 1, 2, 3, - - - - - 9, and 0, 1, 2, 3, - - - - -.

2. To stop the scan operation, depress the SCAN BUTTON, WEATHER CHANNEL BUTTON or rotate the Channel Selector.

3. Other operations are the same as the All Channel Scan.

SEA (DUAL WATCH) OPERATION

This function allows a check of channel 16 while operating on another channel. If a signal appears on channel 16, the radio watches it until the signal has disappeared, then the radio

returns to operate on the other channel.

1. Select the channel 16 by pushing the ⑦ CHANNEL 16 SELECT BUTTON, then engage the SQUELCH.

2. Select your desired channel by pushing the ⑦ DIAL SELECT BUTTON, ⑭ MEMORY READ BUTTON or ⑤ WEATHER CHANNEL BUTTON depending on your desired channel), and turning the ⑪ CHANNEL SELECTOR.

3. Push the ④ SEA (DUAL WATCH) BUTTON, and the radio operates on the selected channel for two or three seconds and on channel 16 for a moment (about 0.1 second) alternately.

4. If a signal appears (the squelch will be opened by the signal) on channel 16, the radio receives on channel 16 until the signal has disappeared, then the radio will continue the SEA OPERATION.

5. The radio can transmit on the selected channel (except weather channels), even if the SEA OPERATION is functioning and the radio is receiving on channel 16. When the radio returns in the receive mode, the radio will continue the SEA OPERATION.

   If you wish to transmit on channel 16, push the ⑦ CHANNEL 16 SELECT BUTTON, and the SEA OPERATION is disengaged and the radio operates on channel 16.

6. If you wish to disengage the SEA OPERATION, push the DIAL SELECT BUTTON, (MEMORY READ BUTTON or WEATHER CHANNEL BUTTON depending on the selected channel), and the radio operates on the selected channel.

HAILER OPERATION

You can use the radio as an audio amplifier for a hailer or public address.

1. Provide an external speaker which is 8 ohms and capable 5 watts or more, and put it as far as possible from the radio to prevent howling.

2. Connect the speaker to the external speaker wires of the radio with a piece of low impedance speaker cord or heavy duty AC power cord.

3. Depress and lock the ⑧ HAILER SWITCH; the display blinks to show the radio is in the hailer mode, however the radio is still in the receive mode and receives on the indicated channel.

4. Depress the PTT (Push-To-Talk) switch on the microphone and talk into the microphone.

5. To disengage the HAILER OPERATION, push again the HAILER SWITCH and release it.

OPERATING RULES AND GUIDELINES

Prevent Interference

Before transmitting, monitor the channel you wish to use to avoid interrupting transmissions in progress.

Call Procedures

Calls must be properly identified and time limits must be respected.

1. Give your call sign each time you place a call to another vessel or a coast station. (If a call sign has not been assigned, identify the station by announcing the vessel name and the name of the licensee.)
2. Give your call sign at the end of each transmission of more than 3 minutes duration.
3. You must break and give your call sign at least once every fifteen minutes during long ship to shore calls.
4. Keep your unanswered calls short (less than thirty seconds) and do not repeat a call for two minutes.
5. Unnecessary Transmissions are not recommended.

Priorities

Read all the rules and regulations pertaining to priorities and keep an up-to-date copy handy. Safety and Distress take priority over all others.
You must monitor and be able to transmit on 156.8MHz, Channel 16.
False or fraudulent distress signals are prohibited and punishable by law!

Privacy

Information overheard but not intended for you cannot lawfully be used in any way. Indecent or profane language is prohibited.

Logs

Use of this equipment requires entry of the watch period of 156.8MHz (CH 16) by the operator with vessel name, call sign and operator signature. All distress, emergency, and safety messages must be recorded in complete detail. Log date activity is usually recorded in 24 hour time. Universal Standard Time (formerly GMT) is frequently used.

Adjustments, repairs, channel frequency changes and authorized modifications affecting electrical operation of the equipment must be kept in the equipment log and entries signed by the authorized licensed technician performing or supervising the work. This is done in the equipment log, a small section is included in the back of this manual. Contacts are recorded in a communication log. A sample of what would be on the page is shown below.

DATE/TIME	CHANNEL	VESSEL	REMARKS	OPERATOR

Channel usage

A channel selection system, frequency-usage, has been internationally adapted for the marine VHF band. Each frequency within the spectrum has been assigned a channel number, for example, 156.300MHz is Channel 6. Specific purposes have been assigned to each channel under this system i.e. inter-ship between two vessels and ship-to-shore. Geographical locations have specific channels assigned for use with the land telephone system.
Your selection of channels to be installed should be based on the type of contacts you plan to make within the areas you live or travel to. The chart on the following pages will aid this selection.

Each geographical area has specific channels assigned to it for use with the land telephone system.

Be sure to review the channels you should have installed in your radio to give you the capability to make the type of contacts you want in the area where you live or plan to travel.

Study the chart on the following pages, showing the available channels and their usage.

USER TIPS

Battery

Prevent battery drain during prolonged transmissions by keeping the vessel's engine running.

Dead Spots

Topography may prevent reception and/or transmission from some locations. Move to another location if you find a "dead spot".

Routine Maintenance

Your ICOM transceiver is designed to provide high quality performance for many years if cared for in a normal manner. Each year you should have the following checked by a licensed technician to verify your unit's performance.

1. Check antenna system
2. Verify transmitter frequency, deviation, and power output.

Battery voltage should be checked often. Your electrical system should be checked if voltage is less than eleven volts or more than sixteen volts at the radio.

Note: This transceiver uses a polarized filter over the channel and function display. Sunglasses polarized opposite to the filter will cause the display to appear totally dark.

MARINE VHF RADIOTELEPHONE CHANNEL FREQUENCIES

Channel	Ship Transmit	Ship Receive	Mode S/D	Only Intl	Only Com	USCG	Function		Type of Operation
							Ship - Ship	Ship to Shore	
1	156.050	160.650	D	yes			no	yes	Public Correspondence, Port Operation
2	156.100	160.700	D	yes			no	yes	Public Correspondence, Port Operation
3	156.150	160.750	D	yes			no	yes	Public Correspondence, Port Operation
4	156.200	160.800	D	yes			no	yes	Public Correspondence, Port Operation
5	156.250	160.850	D	yes			no	yes	Public Correspondence, Port Operation
6	156.300	156.300	S				yes	no	Safety
7	156.350	160.950	D		yes		no	yes	Public Correspondence, Port Operation
7A	156.350	156.350	S		yes		yes	yes	Port Operation
8	156.400	156.400	S		yes		yes	no	Intership
9	156.450	156.450	S				yes	yes	Port Operation
10	156.500	156.500	S		yes		yes	yes	Port Operation
11	156.550	156.550	S		yes		yes	yes	Port Operation
12	156.600	156.600	S				yes	yes	Port Operation
13	156.650	156.650	S				yes	yes	Bridge to Bridge, (1W) Navigational
14	156.700	156.700	S				yes	yes	Port Operation
15		156.750	S				Rcv	Rcv	Recv Only - Coast to Ship
16	156.800	156.800	S				yes	yes	Calling & Safety
17	156.850	156.850	S				yes	yes	Calling & Safety
18	156.900	161.500	D	yes			no	yes	Port Operation
18A	156.900	156.900	S		yes		yes	yes	Port Operation
19	156.950	161.550	D	yes			no	yes	Port Operation
19A	156.950	156.950	S		yes		yes	yes	Port Operation
20	157.000	161.600	D				no	yes	Port Operation
21	157.050	161.650	D	yes			no	yes	Port Operation
21A	157.050	157.050	S			yes	yes	yes	Port Operation (USCG)
22	157.100	161.700	D	yes			no	yes	Port Operation
22A	157.100	157.100	S			yes	yes	yes	Port Operation (USCG)
23	157.150	161.750	D	yes			no	yes	Public Correspondence
23A	157.150	157.150	S			yes	yes	yes	Port Operation (USCG)
24	157.200	161.800	D				no	yes	Public Correspondence
25	157.250	161.850	D				no	yes	Public Correspondence
26	157.300	161.900	D				no	yes	Public Correspondence
27	157.350	161.950	D				no	yes	Public Correspondence
28	157.400	162.000	D				no	yes	Public Correspondence

Channel	Ship Transmit	Ship Receive	Mode S/D	Only Intl	Only Com	USCG	Function: Ship - Ship	Function: Ship to Shore	Type of Operation
60	156.025	160.625	D	yes			no	yes	Public Correspondence, Port Operation
61	156.075	160.675	D	yes			no	yes	Public Correspondence, Port Operation
62	156.125	160.725	D	yes			no	yes	Public Correspondence, Port Operation
63	156.175	160.775	D	yes			no	yes	Public Correspondence, Port Operation
64	156.225	160.825	D	yes			no	yes	Public Correspondence, Port Operation
65	156.275	160.875	D	yes			no	yes	Public Correspondence, Port Operation
65A	156.275	156.275	S				yes	yes	Port Operation
66	156.325	160.925	D	yes			no	yes	Public Correspondence, Port Operation
66A	156.325	156.325	S				yes	yes	Port Operation
67	156.375	156.375	S		yes		yes	no	Port Operation
68	156.425	156.425	S				yes	yes	Port Operation
69	156.475	156.475	S				no	yes	Port Operation
70	156.525	156.525	S				yes	yes	Intership
71	156.575	156.575	S				no	yes	Intership, Port Operation
72	156.625	156.625	S				yes	no	Intership
73	156.675	156.675	S				yes	yes	Port Operation
74	156.725	156.725	S				yes	yes	Port Operation
77	156.875	156.875	S		yes		yes	no	Intership
78	156.925	161.525	D	yes			no	yes	Port Operation
78A	156.925	156.925	S				no	yes	Port Operation
79	156.975	161.575	D	yes			no	yes	Port Operation
79A	156.975	156.975	S		yes		yes	yes	Port Operation
80	157.025	161.625	D	yes			no	yes	Port Operation
80A	157.025	157.025	S		yes		yes	yes	Port Operation
81	157.075	161.675	D	yes			no	yes	Port Operation
81A	157.075	157.075	S			yes	yes	yes	Port Operation (USCG)
82	157.125	161.725	D	yes			no	yes	Port Operation, Public Correspondence
82A	157.125	157.125	S			yes	yes	yes	Port Operation (USCG)
83	157.175	161.775	D	yes			no	yes	Public Correspondence
83A	157.175	157.175	S			yes	yes	yes	Intership, Port Operation (USCG)
84	157.225	161.825	D				no	yes	Port Operation, Public Correspondence
85	157.275	161.875	D				no	yes	Public Correspondence
86	157.325	161.925	D				no	yes	Public Correspondence
87	157.375	161.975	D				no	yes	Public Correspondence
88	157.425	162.025	D	yes			no	yes	Public Correspondence
88A	157.425	157.425	S		yes		yes	no	Intership
WX1		162.550					Rcv	Rcv	NOAA Weather (Recv only)
WX2		162.400					Rcv	Rcv	NOAA Weather (Recv only)
WX3		161.650					Rcv	Rcv	Canada Weather (Recv only)
WX4		162.475					Rcv	Rcv	NOAA Weather (Recv only)

MINOR TROUBLESHOOTING

Your IC-M80 has been design-engineered to provide years of trouble free operation. This has been made possible through the use of the most current technology along with ICOM's years of experience in the production of high quality, dependable VHF/FM equipment. Your IC-M80 has been specifically designed to withstand years of use in many different, extreme environments.

However, as with all marine electronic equipment, it is possible that some problems may occur that would interfere with the operation of the set. Should such a problem occur, it is recommended that your unit be taken directly to your ICOM dealer or authorized ICOM repair service center for qualified service.

Some problems may occur which may interfere with the operation of the radio that are not directly related to the electronic circuitry within your set. Below is a brief description of common problems outside of your set that may occur, and means of identifying them.

1. Antenna

If it appears that you are having unusual difficulty in transmitting or receiving properly, it is possible that the cause is due to a defective or faulty antenna system.

The most common problem that occurs with antenna systems include broken or shorted antenna cable runs, or corroded or defective connector installation. Double check to be sure the connector is soldered to the connector and that it is not shorted.
Visually inspect these items to help isolate the problem.
A qualified technician should correct the antenna problem.

2. Power loss

If, in turning your radio to the ON position, the display fails to light and no sound is heard from the radio, a common problem is low or no power from the battery source in the boat. Visually inspect the power cable from the battery for broken or short leads. Also, inspect the fuses both in the vessel's "fuse block" as well as the fuse in the power cable on the radio for corrosion or a blown fuse.

3. Microphone cable

If, in transmitting, either the voice is not heard or the TX letters is not displayed, the problem could be in the microphone cables. Inspect the mic cables for possible breaks or tears that could be the source of the problem. If such is the case, replace the mic cord.

4. Ignition noise

Occasionally ignition noise from operation of the vessel's engine and/or occasionally refrigeration or power generating equipment may cause static interference with your radio. Ignition noise, alternator "whine" and spurious signals from other electrical devices may be found and cured by experienced technicians using known techniques and noise reduction devices.

TRANSMITTER LOG

RADIO SET SER. NO: _____	Date (Initial Reading)	Date	Date	Date	Date	Date	Date
Transmitter RF Power Output							
Transmitter Deviation							
Transmitter Frequency CH16							
Transmitter Frequency CH 6							
TECHNICIAN SIGNATURE, ADDRESS, FCC LICENSE NO., EXPIRATION DATE							

EMERGENCY USE

If your vessel requires assistance, attract the attention of other vessels and the Coast Guard by sending a distress message on Channel 16.

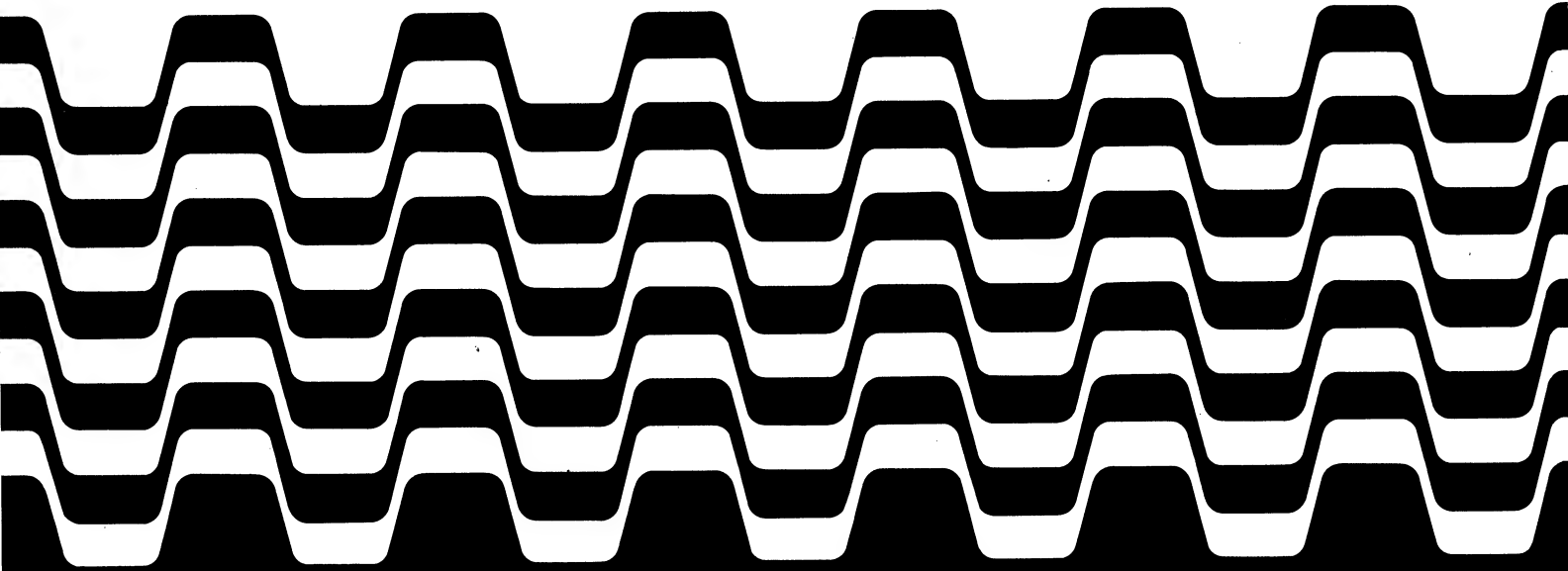
Procedures for sending a distress signal.

1. MAYDAY, MAYDAY, MAYDAY (repeat three times)
2. THIS IS (name of the vessel)
3. LOCATED AT (gives position)
4. Give the reason for the distress call.
5. Explain what assistance you need.
6. Give additional information to help those come to your assistance, (vessel length, color, type, etc.)
7. Use Channel 16 only to make initial contact.
8. After making initial contact agree on an alternate frequency, such as Channel 22A or Channel 6 and clear Channel 16 for other traffic.

ICOM

IC-M80

VHF MARINE RADIOTELEPHONE



ICOM INCORPORATED
6-9-16, KAMIHIGASHI, HIRANO-KU,
OSAKA 547, JAPAN

Printed in Japan

MEMORY READ

1. Push MEMORY READ button.
2. Rotate main tuning knob to select channel.
3. Note readout for channel selected.

MEMORY SCAN

1. Push MEMORY READ button.
2. Push SCAN button.
3. Unit scans ten memories.
4. Unit stops on busy channel.
5. Scan resumes on squelch break.
6. Push DIAL to deactivate scanning.

MEMORY WRITE

1. Push MEMORY READ button.
2. Rotate main tuning knob to select channel.
3. Push MEMORY READ then MEMORY WRITE button in. Hold both buttons in sumultaneously while rotating the main tuning knob until desired channel is displayed.
4. Release MEMORY READ and MEMORY WRITE buttons.

NOTE: When the WRITE (Dimmer) button is depressed and the main tuning knob is turned, the display will dim and brighten.

SEA WATCH

1. Push DIAL button.
2. Rotate main tuning knob to desired channel.
3. Push SEA button.
4. Unit rapidly scans dial channel and channel 16 alternately.
5. If a call comes up on channel 16, the unit will automatically switch to that call.
6. Push DIAL to deactivate sea watch.

SELECTING A CHANNEL

1. Push POWER switch-activates channel 16.
2. Push DIAL button.
3. Select either USA or INTL channels.
4. Rotate main tuning knob to desired channel.

CHANNEL SCANNING

1. Turn SQUELCH to desired level.
2. Push DIAL button.
3. Push SCAN button.
4. When a signal is received, scanning stops.
5. Scan resumes when signal is lost.
6. Push DIAL to stop scanning.

WEATHER CHANNEL

1. Push weather button (WX).
2. Rotate main tuning knob to select weather channel, 0–9.
3. Push SCAN.
4. Unit scans weather channels.
5. Push weather button (WX) to stop scanning.

HAILER

1. Install external hailing speaker.
2. Push HAILER button on (display begins to flash).
3. Pushing the mic button and talking into the microphone causes the hailer speaker to amplify your voice.

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QUICK OPERATING GUIDE M80

M80684

ICOM M80

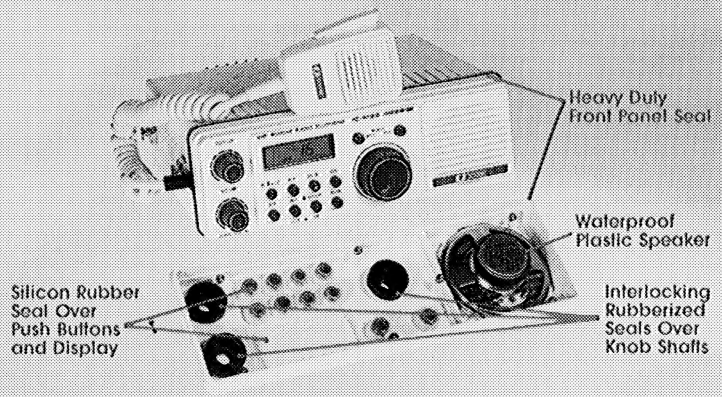
Above and Beyond the Competition

ICOM's All-Channel Water Resistant VHF Radiotelephone

No VHF Marine telephone can compare to the M80's rugged, water resistant design.

All circuitry is protected by a quality constructed **water resistant** enclosure with seals around all knobs, shafts, buttons, speaker, and case flanges.

All Channel. The M80 has all U.S. and International VHF channels . . . plus four weather channels and a ten channel memory . . . accessed by an **easy to use** single knob tuning control.



Powerful. Audio quality second to none, the M80's powerful **5 watt** audio system, with external speaker connections and **hailer** provides crisp, clear sound . . . audio that can be understood even in high noise environments.

Memory. Ten channels of memory . . . owner programmable using the front panel controls . . . allow quick access to your most used channels.

Scanning. Three scanning systems . . . scan all channels, scan the 10 memory channels, scan the weather channels . . . keep you abreast of what's happening.

Sea Watch enables you to monitor two channels at once . . . channel 16 plus one other selected channel . . . lets you communicate while listening for calls on channel 16.

Automatic switching to channel 16 at the end of a conversation.

Reliable and Convenient. ICOM is well known for its tradition of high quality water resistant designs. This, plus convenient size, **lockable mounting bracket** and clearly labeled controls, make the M80 a convenient to install and use VHF.

The M80 is available in traditional white or **grey** (pictured above — M80C) for compatibility with rich wood and/or most other popular interior colors.

All of these features, plus an extra rugged **noise cancelling microphone** (on the grey model) that eliminates annoying or private background conversations, wind and engine noises, make the M80 your best buy in marine VHF.

All this at a Price You'll Love.

See the M80 at your local ICOM marine dealer.

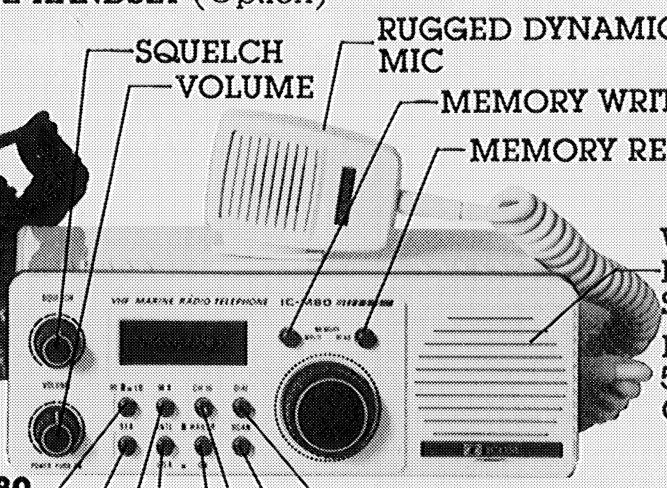
ICOM

The World Leader in Marine Communications.

ICOM America, Inc., 2112-116th Ave NE, Bellevue, WA 98004 **(206)454-8155** / 3331 Towerwood Drive, Suite 307, Dallas, TX 75234 **(214)620-2780**

All stated specifications are approximate and subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions. M804483-1

M80 Features and Specifications



The M80 is designed and built by ICOM INCORPORATED, a long time leader in the field of VHF communication. We put all the technology and experience we have gained over the years in a transceiver that was built from the ground up specifically for Marine. We know that an IC-M80 will give you years of enjoyment and dependable communication.

M80 FEATURES

Available in commercial/limited coast (black) or pleasurecraft (white) versions, the M80 provides extra features making it the most waterproof and easiest to use marine VHF available.

- **Channel 16 Seawatch.** Monitor channel 16 while using or listening to another channel
- **WX Button.** Gives instant access to weather 1 through 4
- **U.S./International.** All channel capability: select U.S. and get U.S. channels (including ship-to-ship channels normally used in the U.S.); International gives access to foreign frequency assignments
- **Channel 16 Priority.** Instant access to the VHF calling/distress channel
- **Scanning.** Three scanning modes: memory scan, all channel scan, weather scan
- **Memory.** A ten channel memory allows quick access to your most commonly used frequencies. (Memory maintained by a 5 year lifetime lithium battery)
- **Water Resistant Sealing.** All knob shafts, buttons, speaker, case openings and the case itself are sealed for maximum water resistance
- **Hailer.** The external speaker system provides a hailer. Be heard on deck or on dockside
- **Other Standard Features.** 25 watts or 1 watt selectable/small size/locking mobile mount/DC power cord
- **ICOM's Lifetime Warranty.**

SPECIFICATIONS

GENERAL

Size	3"(H) X 8½"(W) X 8 3/16"(D)
Weight	4.6 lbs.
Number of Channels	78 marine channels plus 4 weather channels
Stability	0.0005% (Commercial/limited coast); 0.001% (Pleasure)
Temperature Range	-20 to +60 degrees C
Channel Spacing	25 KHz/4.6 MHz Split
Current Drain (Max)	Receive With full 5 watt output — 0.8A Standby — 0.3A Transmit Low output — 1.3A High output — 5.5A
Primary Voltage	13.6 Volts DC
Antenna Impedance	50 ohms
Compliance	FCC Parts 81, 83 and 15

RECEIVER SECTION

Frequency Range	156 — 163 MHz
Sensitivity	0.5 uV (-20dB quieting)
Selectivity	-70dB at 25 KHz (EIA SINAD)
Spurious & Image Rejection	80dB
Threshold Squelch Sensitivity	0.2 uV
Tight Squelch Sensitivity	2 V
IF Frequencies	1st IF: 21.4 MHz 2nd IF: 455 KHz
Audio Output	5 watts to 4 ohm Speaker @ 10% distortion

TRANSMITTER SECTION

Frequency Range	156 — 157.5 MHz
Modulation	±5 KHz (16F3)
RF Power Output	High 25 watts Low 1 watt
Antenna Impedance	50 ohms
Spurious Emissions	70dB below Carrier
Harmonic Emission	60dB below Carrier
Microphone	600 ohm microphone, or 600 ohm handset
Audio Frequency Response	+1, -3dB of 6dB/octave pre-emphasis characteristic from 300 to 3000 Hz
Audio Distortion	Less than 7% at 1000 Hz for ±3 Hz Deviation

ICOM America, Inc., 2112-116th Ave NE, Bellevue, WA 98004 (206)454-8155
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*(For licensed amateur radio operators)

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